

CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A wiper, comprising a rod, a wiping body provided at one end of the rod and an outer packing, characterized in that said outer packing is a tube-like container having both ends closed permanently; the tube-like container is provided with an easy break-off mark at at least one place between both ends of the tube wall; and the rod is of elasticity.

2. The wiper according to claim 1, characterized in that said tube-like container is provided with the easy break-off mark at one place between both ends of the tube wall.

3. The wiper according to claim 1, characterized in that said wiping body is selected from the group comprising: plant fiber, synthetic fiber, glutin sponge, sponge, soft high molecule absorbent material and brush-like article, and is provided at one end of the rod by one method selected from the group comprising: wounding, wrapping, clamping, shaping and interlinking, binding, and injection-molding integrally with the rod.

4. The wiper according to claim 1, characterized in that said wiping body is impregnated with working fluid.

5. The wiper according to claim 1, characterized in that said wiping body provided at one end of the rod is divided into two parts along the axial direction of the rod.

6. The wiper according to claim 1, characterized in that said rod has a cavity containing working fluid, an upper end opening closed by fusion, an easy break-off mark provided at the upper end portion, and a lower end opening blocked by silicone oil.

7. The wiper according to claim 1, characterized in that said rod has a cavity containing working fluid, an upper end opening closed by fusion, an easy break-off mark provided at the upper end portion, and a lower end opening closed by a tube-like article,

which is connected with an end portion of the tube-like container and one end of which is sealed.

8. The wiper according to claim 1, characterized in that inside the tube-like container there is provided with a piston-like article whose diameter corresponds to the inner diameter of the tube-like container, and the tube-like container contains working fluid below the piston-like article, and there are three longitudinal slots arranged equidistantly along the circumference of the inner wall of the tube-like container.

9. The wiper according to claim 1, characterized in that inside the tube-like container there is a spherical cap-like article, the outer diameter of the upper portion of which corresponds to the inner diameter of the tube-like container and which is deformable under force.

10. The wiper according to claim 1, characterized in that said tube-like container stores at least two rods therein, one end of each rod being provided with a wiping body.

11. The wiper according to claim 1, characterized in that the end of the rod, opposite to the end provided with the wiping body, is fixedly coupled with an end portion of the tube-like container.

12. The wiper according to claim 1 or claim 11, characterized in that on the wall of the tube-like container between both ends there are provided with easy break-off marks at two places.

13. The wiper according to claim 1 or claim 11, characterized in that inside the wiping body there is provided with one of the following substance: working fluid, working powder and working ointment.

14. The wiper according to claim 1 or claim 11, characterized in that along the axial direction of the rod, said wiping body provided at one end of the rod is divided into two parts, both being impregnated with working fluid.

15. The wiper according to claim 1 or claim 11, characterized in that said rod has an easy break-off mark, an upper end coupled with a sealing plug which closes the upper end opening of the tube-like container through fusion, and a lower end provided with the wiping body, which along the axial direction of the rod is divided into two parts, one of them being impregnated with working fluid.

16. The wiper according to claim 1 or claim 11, characterized in that said rod has a cavity containing working fluid, an end opening of the end provided with the wiping body closed by a tube-like article, which is connected with an end portion of the tube-like container and one end of which is sealed, a convex neck provided at the upper portion and sealing the upper end opening of the tube-like container through fusion, and an easy break-off tail tube which extends upwardly from the convex neck, its upper end opening being closed and its lower portion being provided with an easy break-off mark.

17. The wiper according to claim 1 or claim 11, characterized in that said rod has a cavity containing working fluid, and an end opening of the end provided with the wiping body, said end opening is closed by a tube-like article, which is connected with an end portion of the tube-like container and one end of which is sealed.

18. The wiper according to claim 1 or claim 11, characterized in that said rod has a cavity containing working fluid, an upper end closed with the upper end opening of the tube-like container through fusion, a middle portion connected with the tube-like container by a connecting member which forms an interference fit with the tube-like container, and an easy break-off mark which is provided on the wall of the rod above the connecting member and corresponds to the easy break-off mark on the outer wall of the tube-like container.

19. The wiper according to claim 1 or claim 11, characterized in that on said rod there is provided with at least one piston-like article, the diameter of which corresponds to the inner diameter of the tube-like container and above which there are provided with three longitudinal slots arranged equidistantly along the circumference of the inner wall of the tube-like container.

20. The wiper according to claim 1 or claim 11, characterized in that two wipers are paired up and connected with each other.

21. The wiper according to claim 1 or claim 11, characterized in that in the middle of the cavity of said tube-like container there is provided with a plug-like article, which divides the cavity into two independent chambers.

22. A preparing method of the wiper according to claim 1, characterized in that the ends of said tube-like container are closed permanently by using one of the following methods: heat fusion with heat source, ultrasonic fusion, electromagnetic induction fusion, laser beam fusion, blocking with hot melt adhesive, binding, injection-molding and mechanical sealing.

23. A preparing method of the wiper according to claim 1, comprising the following steps: (1) extruding thermoplastic material into a tubing, cutting the tubing, and scratching an easy break-off mark thereon to form a tube-like container; (2) inserting the rod provided with a wiping body at one end thereof into the tube-like container; and (3) fusing and closing both ends of the tube-like container.

24. A preparing method of the wiper according to claim 1 or claim 11, comprising the following steps: (1) extruding thermoplastic material into a tubing, cutting the tubing, and scratching an easy break-off mark thereon to form a tube-like container; (2) inserting the rod into the tube-like container after the wiping body at one end of the rod is impregnated with working fluid; and (3) heat fusing both ends of the tube-like container to close them, with one end of the rod fixedly coupled with one end of the tube-like container through fusion.

25. A preparing method of the wiper according to claim 1 or claim 11, comprising the following steps: (1) injection-molding thermoplastic material to form a tube-like container with one end opened and the other end fused and closed, and a sealing plug whose outer diameter corresponds to the inner diameter of the open end of the tube-like container; (2) inserting the rod into the tube-like container after inserting the end of the rod, opposite to the end provided with the wiping body, into a socket pre-arranged inside the sealing plug; (3) by using one of the following process: ultrasonic wave,

electromagnetic induction, bonding and mechanical sealing, the opening end of the tube-like container being fixedly coupled with and closed by the sealing plug; and (4) scratching an easy break-off mark on the tube-like container.

26. A preparing method of the wiper according to claim 1 or claim 11, comprising the following steps: (1) injection-molding thermoplastic material to form a tube-like container with one end opened and the other end fused and closed; (2) scratching an easy break-off mark thereon; (3) filling the tube-like container with working fluid through its opening end; (4) inserting the rod provided with a wiping body at one end thereof into the tube-like container; and (5) by using heating or hot melt adhesive, fusing and closing the opening end of the tube-like container, with one end of the rod fixedly coupled with said end of the tube-like container through fusion.